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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/623,034	FOGEL ET AL.	
	Examiner	Art Unit	
	Jason M. Repko	2671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-91 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-91 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,682,469 to Linnett et al (herein referred to as "Linnett et al.")

3. With regard to **claim 1**, Linnett et al discloses "a method for presenting and controlling a digital background for a real-world setting in a computer display, the method comprising the following operations:"

"presenting a background" (*Fig. 2*);

"inputting an operator's choice of action or inaction to a situation state module;"(*lines 15-18 of column 9: "The entering of a manual carriage return by the user is a triggering event. The application 28 then tells the tracking service 105 of the occurrence of the triggering event (step 107)."; lines 11-2 of column 11 "The shell 30 provides the user with the ability to log on and gain access to the rooms that constitute his "home".*) "or the operator's inaction" (*lines 38-41 of column 10: "The idle animation is displayed whenever no other commands have been send to the actor services 112. It should be appreciated that the idle animation may be requested by applications 28 and by the shell 30."*);

"updating a current state based on the operator's action or inaction" (*lines 20-23 of column 9: "Each time that the user performs the correct action (i.e., an action that if performed incorrectly would trigger a tip), the number of lives is decremented by 1."; lines 12-15 of column 11: "The shell 30 provides the user with the ability to log on and gain access to the rooms that constitute his "home". FIG. 12 is a flow chart of the steps that are performed during a log-on sequence in the preferred embodiment of the present invention."*);

"using the current state by the decision logic to determine how to control a background in the setting" (*the state of user's "first logon" 128 controlling the showing of the last room 132 or default room 130 is taught in Fig. 12*);

4. Linnett et al does not use the explicit language "background"; however, one of ordinary skill in the art would recognize from Fig. 2 that the room 32 is analogous to a background, as broadly recited in the instant application, on which the animated character is placed.

5. With regard to **claim 2**, Linnett et al discloses "sending a selection of control of the background to the display" (*lines 35-37 of column 12: "A user may change the style of a room. The shell 30 provides a balloon that provides a user the option of changing the style of the room."*).

6. With regard to **claim 6**, Linnett et al discloses "using the current state by a decision logic to determine a response in a setting by a character" (*Fig. 11A shows the animation 115 being requested from the character data file 39 in response to a command 114 triggered by the application 28, and Fig. 10B shows the decision logic 110 corresponding to displaying a tip.*); "modifying the character" (*lines 4-8 of column 6: "...the appearance of the personal character*

changes. For example, if the user invokes a spreadsheet program, the personal character might don a green visor, change his vocabulary and be more helpful than usual.").

7. Claims 1, 3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 4,766,541 to Bleich et al (herein referred to as "Bleich et al.")

8. With regard to **claim 1**, Bleich et al discloses "a method for presenting and controlling a digital background for a real-world setting in a computer display, the method comprising the following operations:"

"presenting a background" (*lines 42-43 of column 2: "The video game employing the interactive video disk background generation system of the present invention is shown as 10 in FIG. 1..."*);

"inputting an operator's choice of action or inaction to a situation state module; updating a current state based on the operator's action or inaction" (*lines 21-25 of column 10: "One such example is a road-rally type game wherein the player, i.e. the driver, reaches an intersection having three possible courses of action: to go straight, to turn right, or to turn left. Any of these possible sequences may be selected by the player..."*);

"and using the current state by a decision logic to determine how to control the background in the setting" (*lines 45-48 of column 9: "Foremost is the present capability of generating a detailed full screen background which is immediately responsive to player or processor directed game play."; "Interactive video disk game play is achieved by game processor 72 control of disk player 12 through interface 78 and, more specifically, by selectable skipping of video tracks on the disk."*).

9. Bleich et al does not explicitly use the language "simulation state module" or "current state"; however, one of ordinary skill in the art would recognize that it is inherent that a video game program as described by Bleich et al in lines 19-15 of column 10 would have a current situational state of the player in the game from the statement on lines 23-25 of column 6 (*"These 'movements of game symbols are accompanied by corresponding manipulations of the symbols in screen RAM 86."*), and the update of the current situational state would be a result of the operator's choice of action or inaction from lines 14-17 of column 6 (*"A variety of game symbols may be written to screen RAM 86 including symbols representative of the players, their adversaries, as well as obstacles, projectiles, and like objects."*).

10. With regard to **claim 3**, Bleich et al discloses "the operation of interacting with a video controller to modify the background to a display" (*lines 19-21 of column 10: "By contrast, the present controller permits alternative background environment segments to be conveniently stored in alternating sequences of `mini-blocks`; lines 25-30 of column 10: "Any of these possible sequences may be selected by the player and, since it cannot be known until the player reaches the intersection which route will be selected, each is stored on the video disk in a series of mini-blocks instantaneously accessible upon proper game processor command."*).

11. With regard to **claim 5**, Bleich et al discloses "the background is a digital background," (*lines 47-48 of column 2: "Video picture data is retained digitally on disk..."*) and "wherein the operation of presenting the background comprises providing a series of concatenated still pictures generated to provide life-like movement in the background" (*lines 30-34 of column 10: "One possible arrangement of these sequences would be ten frames of left-turn followed by ten frames of straight followed by ten frames of right-turn--this sequence being repeated along the*

disk for the desired time duration."). Bleich et al does not explicitly use the language "still pictures"; however, one of ordinary skill in the art would recognize this feature is inherent by the statement on lines 3-8 of column 8: "As previously discussed, each frame of video defines a single complete `track` on the video disk and, therefore, it is merely necessary to incrementally displace the playback head radially across the tracks in order to achieve video still-frame or frame skipping, in either the forward or reverse direction.

12. Claims 1 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent No. 10-201954 A to Kanbe et al (herein referred to as "Kanbe et al"),

13. With regard to **claim 1**, Kanbe et al discloses

a. "presenting a background" (*drawing 2 shows the playing area which also serves as the background*);

b. inputting a human operator's choice of action or the operator's inaction to a situation state module" using the controller 16 (*machine translation of paragraph 70: "That is, CPU 8 generates the command as a task for drawing or a voice output suitably based on the contents of directions (...a discarded tile, reach a tile...etc.) directed from a game player through a controller 16."*);

c. "updating a current state based on the operator's action or inaction," wherein the operator's actions, such as discarding a tile, can cause an update to the mah-jongg game state as shown in machine translated paragraphs 29 and 94;

d. "using the current state by the decision logic to determine how to control the background in the setting" (*drawing 2 shows the playing area showing the current state*

of the game; machine translation of paragraph 5: "The control section which obtains image data and/or voice data so that it may be in the display and/or output state according to the waging-war situation of said waging-war character... ").

14. With regard to **claim 9**, Kanbe et al shows "the operation of presenting a two-dimensional representation of a playing area" (*drawing 2 shows a two-dimensional top-down representation the playing area*).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

16. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

17. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

18. **Claims 4, 7, 11, 14, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linnett et al in view of U.S. Patent 6,600,491 to Szeliski et al (herein referred to as "Szeliski et al.")**

19. With regard to **claim 11**, Linnett et al discloses "a method for presenting a character for an interaction, the method comprising the following operations:"

"inputting a human operator's choice of action"(*lines 15-18 of column 9: "The entering of a manual carriage return by the user is a triggering event. The application 28 then tells the tracking service 105 of the occurrence of the triggering event (step 107)."; lines 11-12 of column 11 "The shell 30 provides the user with the ability to log on and gain access to the rooms that constitute his "home".*) "or the operator's inaction" (*lines 38-41 of column 10: "The idle animation is displayed whenever no other commands have been send to the actor services 112. It should be appreciated that the idle animation may be requested by applications 28 and by the shell 30."*);

"updating a current state based on the operator's action or inaction" (*lines 20-23 of column 9: "Each time that the user performs the correct action (i.e., an action that if performed incorrectly would trigger a tip), the number of lives is decremented by 1."; lines 12-15 of column 11: "The shell 30 provides the user with the ability to log on and gain access to the rooms that constitute his "home". FIG. 12 is a flow chart of the steps that are performed during a log-on sequence in the preferred embodiment of the present invention.");*

"using the current state by a decision logic to determine a response in a setting by the character" (*Fig. 11A shows the animation 115 being requested from the character data file 39 in response to a command 114 triggered by the application 28, and Fig. 10B shows the decision logic 110 corresponding to displaying a tip.*);

"modifying the character" (*lines 4-8 of column 6: "...the appearance of the personal character changes. For example, if the user invokes a spreadsheet program, the personal character might don a green visor, change his vocabulary and be more helpful than usual."*).

20. With regard to the limitation of **claim 11** on lines 17-18 of page 20, and **claim 7**, Linnett et al discloses "presenting a series of animation clips for the character" (*lines 15-16 of column 10: "The animations 40 stored within the data file 39 includes video frames as well as duration and timing information."; lines 18-21 of column 10: "The conditional branching information allows the play sequence of frames to vary so that, under certain conditions, the frames are played at a different sequence than they are normally played."; lines 38-39 of column 10: "The idle animation is displayed whenever no other commands have been sent to the actor services 112."*). Linnett et al is silent as to whether the video clips are joined into the appearance of a continuous streaming image of the character. Szeliski et al discloses "presenting a series of individual video clips that are joined in to the appearance of a continuous streaming image" (*lines 4-9 of column 13: "Rather, the video clip could be made up of multiple sequences of the scene captured at different times. Regardless of how many video sequences make up the inputted video clip, the trick is to produce the aforementioned new sequences such that the motion appears smooth and seamless to the viewer."*) of a character (*lines 43-45 of column 2: "For*

example, another application of the video sprite concept involves objects that move about the scene in the input video clip such as an animal, vehicle, and person.").

21. Linnett et al and Szeliski et al are analogous art because they are from the same problem solving area: simulating realistic interaction with computer animated objects. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the character animation disclosed by Linnett et al with the video sprite disclosed by Szeliski et al in order to give the character the appearance of a continuous streaming image. The motivation for doing so would have been to achieve a greater degree of realism by giving the character "dynamic qualities" as stated by Szeliski et al in lines 9-11 of column 2. Therefore, it would have been obvious to combine Linnett et al with Szeliski et al to obtain the invention as specified in **claims 7 and 11**.

22. With regard to **claim 25**, Linnett et al discloses "using the current state by the decision logic to determine how to control a background in the setting" (*the state of user's "first logon" 128 controlling the showing of the last room 132 or default room 130 is taught in Fig. 12*); "sending a selection of control of the background to the display" (*lines 35-37 of column 12: "A user may change the style of a room. The shell 30 provides a balloon that provides a user the option of changing the style of the room."*). Linnett et al does not use the explicit language "background"; however, one of ordinary skill in the art would recognize from Fig. 2 that the room 32 is analogous to a background, as broadly recited in the instant application, on which the animated character is placed.

23. With regard to **claims 4 and 24** and the limitation of **claim 25** recited on line 16 of page 15, Linnett et al does not disclose using a continuously streaming video to present a background.

Szeliski et al discloses "the operation of continuously streaming video to present a background" (*line 66 of column 1 through line 1 of column 2: "The new medium, which is referred to as a video texture, can provide a continuous, infinitely varying stream of video images."; line 65 of column 21 through line 1 of column 22 as shown in the rejection of claim 11; lines 16-18 of column 2: "Video textures could also find application as dynamic backdrops for scenes composited from live and synthetic elements."*).

24. At the time of the invention it would have been obvious to a person of ordinary skill in the art to further modify Linnett et al with video textures as taught by Szeliski et al to use continuously streaming video to present the background. The motivation for doing so would have been to achieve a greater degree of realism by giving the background "dynamic qualities," as suggested by Szeliski et al in lines 9-11 of column 2. Therefore, it would have been obvious to combine Linnett et al with Szeliski et al to obtain the invention as specified in **claims 4, 24 and 25.**

25. **Claim 14** is met by the combination of Linnett et al and Szeliski et al, wherein Linnett et al discloses "providing a motion of the character in a time-dependent manner based on interaction with the human operator" (*lines 38-41 of column 10: "The idle animation is displayed whenever no other commands have been send to the actor services 112. It should be appreciated that the idle animation may be requested by applications 28 and by the shell 30."*).

26. Claims 11, 12, 15, 16, 18, 19, 20, 22, 23, 26, 28, 30-34, 80, 87, 89, and 90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanbe et al in view of Szeliski et al.

27. With regard to **claim 11**, Kanbe et al discloses "a method for presenting a character for an interaction, the method comprising the following operations:"

e. "inputting a human operator's choice of action" using the controller 16 (*machine translation of paragraph 70: "That is, CPU 8 generates the command as a task for drawing or a voice output suitably based on the contents of directions (...a discarded tile, reach a tile, [other game actions], etc.) directed from a game player through a controller 16."*);

f. "updating a current state based on the operator's action or inaction," wherein the operator's actions, such as discarding a tile, can cause an update to the mah-jongg game state as shown in machine translated paragraphs 29 and 94;

g. "using the current state by a decision logic to determine a response in a setting by the character" (*machine translation of paragraph 17: "Furthermore, a motion of the face for every waging-war character as image data in this invention is a motion which looks at which direction at least among the direction into which the tile was thrown away, the direction of the partner who cried, and the direction of a partner which carried out win preferably."; machine translation of paragraph 75: "As shown in drawing 12 , by making the example of the CPU character into Uchida (woman), first, a control section 20 is controlled by the step ST 11 with game data, and the initial set (128 points) of the basic feeling value classified by CPU character is performed."*). The computer-controlled players respond to the current state in a number of ways: giving messages (*machine translated paragraph 15*), facial expressions (*machine translated paragraph 7*), and game actions in general such as discarding tiles (*machine translated paragraph 5*);

h. "modifying the character," wherein the image depicting the character's expression is modified based on the feeling value (*machine translation of paragraph 43:*

"Furthermore, with the expression set of the face by the set feeling value, the expression of the face of the CPU character is usually changed to four kinds of a laughter face, common face, and sadness face and a resentment face according to the set feeling value.").

28. Kanbe et al does not specifically disclose a video clips joined in to the appearance of a continuous streaming image. Szeliski et al discloses "presenting a series of individual video clips that are joined in to the appearance of a continuous streaming image" (*lines 4-9 of column 13: "Rather, the video clip could be made up of multiple sequences of the scene captured at different times. Regardless of how many video sequences make up the inputted video clip, the trick is to produce the aforementioned new sequences such that the motion appears smooth and seamless to the viewer."*) of a character (*lines 43-45 of column 2: "For example, another application of the video sprite concept involves objects that move about the scene in the input video clip such as an animal, vehicle, and person."*).

29. Kanbe et al and Szeliski et al are analogous art because they are from the same problem solving area: simulating realistic interaction with computer animated objects. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the characters disclosed by Kanbe et al with the video sprite disclosed by Szeliski et al in order to give the character the appearance of a continuous streaming image. The motivation for doing so would have been to achieve a greater degree of realism by giving the character "dynamic qualities" as stated by Szeliski et al in lines 9-11 of column 2. Therefore, it would have been obvious to combine Kanbe et al with Szeliski et al to obtain the invention as specified in **claim 11**.

30. **Claim 12** is met by the combination of Kanbe et al and Szeliski et al, wherein Kanbe et al discloses "the operation of controlling the character in response to situations in a game" (*machine translation of paragraph 72: "Drawing 7 is a flow chart which shows change item control routines, such as face expression change according to the waging-war situation for every CPU character by the mah-jongg game equipment of this invention."*).

31. **Claim 15** is met by the combination of Kanbe et al and Szeliski et al, wherein Kanbe et al discloses "the operation of using a series of triggers to control the character with responses that are different depending on game situation" (*the triggers corresponding to character responses (facial expressions, voices and messages) are presented in machine translated paragraphs 63 and 64.*) For example, in items 3-7 of paragraph 63, Kanbe et al discloses a trigger ("the CPU character itself – reorganization – applying...") and varied character responses ("sadness face, "usually face", "resentment face") depending on the number of tiles.

32. **Claim 16** is met by the combination of Kanbe et al and Szeliski et al, wherein Kanbe et al discloses "the operation of using a series of triggers to control the character with responses that are different depending on a game situation," as shown in the rejection of claim 15. Furthermore, Kanbe et al discloses that "the responses are continuous, wherein the responses include movement both during and between game moves of the character and the human operator" (*machine translation of paragraph 138: "...changes every moment according to this invention as mentioned above -- the expression of a face, a motion of a face, a message..."*). Furthermore, in paragraphs 62-64, Kanbe et al lists various game moves by the human player and other CPU controlled players that can occur between and during a human operator's turn, such as playing

tiles (*machine translation of paragraph 62: "2. When the Last Wind Tile is Player (13-15, Resentment Face)"*), that cause a change in the character's expression.

33. **Claim 18** is met by the combination of Kanbe et al and Szeliski et al, wherein Kanbe et al discloses "the operation of using triggers to control responses of the character, wherein the triggers include the human operator's sequence of moves during a game" (*machine translation of paragraph 42 gives the situations that change the feeling value, "reorganization can be applied at the time of the discarded tile of other houses (-ten points)..."*). Specifically, machine translation of paragraph 42 shows that the sequence of moves of other players (including those of the human operator) may result in a change in the feeling value of the character, which in turn triggers a response in a character as described in the rejection of claim 11.

34. **Claim 19** is met by the combination of Kanbe et al and Szeliski et al, wherein Kanbe et al discloses "the operation of using triggers to control responses of the character, wherein the triggers include the human operator's strategic position in a game" (*machine translation of paragraph 42 as shown in the rejection of claim 18.)* Kanbe et al does not explicitly use this language; however one of ordinary skill in the art would recognize that this feature is inherent because paragraph 42 shows that the feeling value of a computer opponent is decremented in response to a number of actions indicating the strategic position of the other players including the human operator. (The feeling value is used to determine a response in the character, such as a change in expression, as described in the rejection of claim 11.)

35. **Claim 23** is met by the combination of Kanbe et al and Szeliski et al, wherein Kanbe et al discloses "the character is an opponent in a game" (*machine translation of paragraph 3 gives an overview of the game, where the office interprets the machine translated English phrase*

"waging-war character" to be a description of an opponent character, as the invention clearly pertains to a well-known game "mah-jongg.")

36. **Claim 28** is met by the combination of Kanbe et al and Szeliski et al, wherein Kanbe et al discloses "presenting a two-dimensional representation of a playing area" (*Drawing 2; machine translation of paragraph 27: "In the display screen as shown in drawing 2 as which the hand and the contents of a discarded tile of the player, the contents of a discarded tile of the waging-war character, a message, and face expression..."*).

37. With regard to **claim 20**, Kanbe et al discloses modifying the characters based on triggers, such as changing the expression based on the triggers as shown in claim 11. Kanbe et al does not specifically disclose interacting decision logic with a video controller. Szeliski et al discloses "interacting decision logic with a video controller" in Fig. 12 in order to schedule primitive video loops to create a new video sequences from fixed length video clips.

38. With regard to **claim 22**, Kanbe et al discloses modifying the characters as shown in claim 11. Kanbe et al does not specifically disclose a video library. Szeliski et al discloses "the operation of modifying a character using a library of videos" (*lines 33-36 of column 20: "After finding the list of primitive loops in the lowest cost compound loop for a particular loop length, the primitive loops (or transitions) are scheduled in some order so that they form a valid compound loop as described above."; lines 43-45 of column 2: "For example, another application of the video sprite concept involves objects that move about the scene in the input video clip-such as an animal, vehicle, and person."*). Szeliski et al does not use the explicit language video libraries; however, one of ordinary skill in the art would recognize that the "list

of primitive fixed length video sequences" of lines 33-26 of column 20 are analogous to a library of videos as broadly recited in claim 22.

39. With regard to **claim 80,** Kanbe et al discloses "presenting a background; setting a character against the background." Kanbe et al discloses in drawing 2 presenting a character represented by an image of a face contained in a rectangular region set against a background that serves as a representation of a playing area. Furthermore, Kanbe et al discloses "inputting a human operator's choice of action" (as shown in the rejection of the limitation of claim 11 recited on lines 19 of page 13); "updating a current state based on the operator's action or inaction" (as shown in the rejection of the limitation of claim 11 recited on lines 20 of page 13); "using the current state by a decision logic to determine a response in a setting by the character" (as shown in the rejection of the limitation of claim 11 recited on lines 21-22 of page 13); "modifying the character" (as shown in the rejection of the limitation of claim 11 recited on lines 23 of page 13). With regard to the limitation of claim 80 recited on line 17 on page 23, Kanbe et al does not specifically disclose a video library. Szeliski et al discloses "the operation of modifying a character using video libraries" as shown in the rejection of claim 22.

40. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate a method for sequencing and transitioning between video sequences as disclosed by Szeliski et al to further modify the characters disclosed by Kanbe et al. The motivation for doing so would have been to achieve a greater degree of realism by giving the character (an animal, vehicle or person in a video game) "dynamic qualities" as stated by Szeliski et al in lines 9-11 of column 2. Therefore, it would have been obvious to further modify Kanbe et al with Szeliski et al to obtain the invention as specified in **claims 20, 22, and 80.**

41. With regard to **claim 26**, Kanbe et al shows the limitations of claim 11, but does not disclose a background by providing a series of concatenated still pictures. Szeliski et al discloses "the operation of presenting a digital background by providing a series of concatenated still pictures generated to provide life-like movement in the background" (*lines 16-18 of column 2: "video textures could also find application as dynamic backdrops for scenes composite from live and synthetic elements"; lines 21-24 of column 3: " Further, the cost of transitioning between a particular frame and another frame is computed using the similarity between the next frame in the input video following the frame under consideration. "*). Szeliski et al does not use the explicit language "concatenated still pictures"; however, one of ordinary skill in the art would recognize that this feature is inherent from the statement on lines 21-24 of column 3 that the frames of the video sequences are treated individually. Thus, the frames of the video sequence used for a background would be "a series of concatenated still-pictures."

42. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to further modify the combination of Szeliski et al and Kanbe et al to include a background of concatenated still pictures. The motivation for doing so would have been to give the background "dynamic qualities" as stated by Szeliski et al in lines 9-11 of column 2, instead of using a static photo, thereby increasing the realism of the interaction. Therefore, it would have been obvious to further modify Kanbe et al with Szeliski et al to obtain the invention as specified in **claim 26.**

43. **Claim 30** is rejected with the rationale of claim 11. Claim 30 is similar in scope to claim 11, wherein video clips are analogous to animation clips.

44. **Claim 31** is met by the combination of Kanbe et al with Szeliski et al, wherein Szeliski et al discloses "the operation of modifying a character using a library of animations" (*lines 33-36 of column 20: "After finding the list of primitive loops in the lowest cost compound loop for a particular loop length, the primitive loops (or transitions) are scheduled in some order so that they form a valid compound loop as described above."; lines 43-45 of column 2: "For example, another application of the video sprite concept involves objects that move about the scene in the input video clip-such as an animal, vehicle, and person"*). Szeliski et al does not use the explicit language video libraries; however, one of ordinary skill in the art would recognize that the "list of primitive fixed length video sequences" of lines 33-26 of column 20 are analogous to a library of animation as broadly recited in claim 31.

45. With regard to **claims 32 and 33**, the Kanbe et al with Szeliski et al combination does not show that the animation is cell or clay animation; instead, the Kanbe et al and Szeliski et al combination shows the animation is from real-world video.

46. At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to use clay animation or cell animation because the applicant has not disclosed that using clay animation or cell animation provides an advantage, is used for a particular purpose, or solves a stated problem. Furthermore, one of ordinary skill in the art would have expected the Kanbe et al and Szeliski et al combination to perform equally well with either real-world video animation as taught by Szeliski et al or the claimed clay (claim 33) or cell (claim 32) animation because all three types of animations would perform the same function of representing a character in an interaction equally well.

47. Therefore, it would have been prima facie obvious to modify the Kanbe et al and Szeliski et al combination to obtain the invention as specified in **claims 32 and 33** because such a modification would have been considered a mere design consideration which fails to patentably distinguish over the prior art of Kanbe et al and Szeliski et al.

48. **Claim 34** is met by the combination of Kanbe et al and Szeliski et al, wherein Kanbe et al discloses "the operation of using the current state by the decision logic to determine how to control the background in the environment" (*drawing 2 shows the playing area which also serves as the background which displays the current state of the game; machine translation of paragraph 5: "The control section which obtains image data and/or voice data so that it may be in the display and/or output state according to the waging-war situation of said waging-war character..."*).

49. With regard to **claim 87**, Kanbe et al discloses "inputting an operator's choice of action or inaction" (as shown in the rejection of claim 11); "updating a current state based on the operator's action or inaction" (as shown in the rejection of claim 11); "using the current state by a decision logic to determine a response in a setting by the character" (as shown in the rejection of claim 11.) Kanbe et al does not disclose streaming video or video clips. Szeliski et al discloses "presenting a streaming video of a real-world background" (*line 66 of column 1 through line 1 of column 2: "The new medium, which is referred to as a video texture, can provide a continuous, infinitely varying stream of video images."; line 65 of column 21 through line 1 of column 22 as shown in the rejection of claim 11; lines 16-18 of column 2: "Video textures could also find application as dynamic backdrops for scenes composited from live and synthetic elements."*). Szeliski et al discloses, "presenting a series of individual video clips that are joined in to the

appearance of a continuous streaming image of a real world-character" (as shown in the rejection of claim 11). Szeliski et al does not use the explicit language "real-world character" in lines 4-9 of column 13 and lines 43-45 of column 2; however, one of ordinary skill in the art would recognize that this feature is inherent from the statement on lines 14-16 of column 2: "Or an actor could provide a dynamic 'head shot' with continuous movement on his home page." Szeliski et al discloses "using the current state by the decision logic to determine a selection of how to control video of the character and how to control video of the background" (*lines 4-9 of column 26: "As the user moves a slider (e.g., a time bar like on a video player) selecting a certain temporal portion of the video, the synthesis attempts to select frames that remain within that portion of the video, while at the same time using only fairly smooth transitions to jump back in time"*). As previously shown, Szeliski et al discloses using a video texture as a background.

50. With regard to **claim 89**, Kanbe et al discloses "the situation state of the digital environment," as shown in claim 11. Kanbe et al discloses "a course of action," as shown in claim 65. Szeliski et al discloses "a library of videos," as shown in claim 22 (incorporated here by reference. With regard to the limitation of claim 89 recited on line 28 of page 25 through line 2 of page 26, Kanbe et al discloses "relating a current situation state and current triggers to a course of action to determine the most appropriate update to the environment" in machine translated paragraph 55, where the manner in which the tile is thrown is depended on the feeling value and the state of the game. Kanbe et al discloses that the feeling value is incremented and decremented based on triggers as shown in machine-translated paragraph 42. Kanbe et al does not show relating state and triggers to videos to determine the most appropriate update to the environment. Szeliski et al discloses "a video controller; and decision logic for relating current

situation state triggers to library of videos to determine a most appropriate update to the digital environment" (*lines 4-9 of column 26: "As the user moves a slider (e.g., a time bar like on a video player) selecting a certain temporal portion of the video, the synthesis attempts to select frames that remain within that portion of the video, while at the same time using only fairly smooth transitions to jump back in time."*), and "for interacting with the video controller to modify a character and a background in the virtual reality environment presented on the display" in Fig. 12 in order to schedule primitive video loops to create a new video sequences from fixed length video clip. As previously shown in the rejection of claim 87 (the limitation stated on lines 10-11 on page 25), Szeliski et al shows that the video texture can be used as a character or as a background and the videos will be controlled in an analogous manner in either embodiment.

51. At the time of the invention, it would have been obvious to modify the Szeliski et al controlled character embodiment by substituting a background video instead of the character video used in the above embodiment disclosed by Szeliski et al, as suggested by Szeliski et al in lines 16-17 of column 2. Furthermore, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to substitute a real-world background and character video as disclosed by Szeliski et al for the synthetic non-video background and character of Kanbe et al. The motivation for doing so would have been to give the character and the background "dynamic qualities" as stated by Szeliski et al in lines 9-11 of column 2, enhancing the realism of the interaction. Therefore, it would have been obvious to combine Kanbe et al with Szeliski et al to obtain the invention as specified in **claims 87 and 89**.

52. **Claim 90** is met by the combination of Kanbe et al and Szeliski et al, wherein Kanbe et al discloses "the operation of using triggers to control responses of the character, wherein the

triggers include the human operator's sequence of moves during a game" (*machine translation of paragraph 42 gives the situations that change the feeling value, "reorganization can be applied at the time of the discarded tile of other houses (-ten points)... "*), and Kanbe et al discloses "the operation of using triggers to control responses of the character, wherein the triggers include the human operator's sequence of moves during a game" (*machine translation of paragraph 42 gives the situations that change the feeling value, "reorganization can be applied at the time of the discarded tile of other houses (-ten points)... "*). Specifically, Kanbe et al discloses in machine translation of paragraph 42 shows that the sequence of moves of other players (including those of the human operator) may result in a change in the feeling value of the character, which in turn triggers a response in a character as described in the rejection of claim 11.

53. Claims 13, 17, 21, 81, 82, and 91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanbe et al in view of Szeliski et al and in further view of U.S. Patent No. 6,798,426 to Tateishi (herein referred to as "Tateishi.")

54. With regard to **claim 13**, the combination of Kanbe et al and Szeliski et al meets the limitations of claim 11 on which claim 13 depends, but does not teach controlling the character "in response to time between moves by the human operator." Tateishi discloses "the operation of controlling the character in response to the time between moves by the human operator" (*Fig. 12; lines 64-67 of column 12: "A display image 9B shows the state wherein the state of no command input relative to the dialogue options displayed in front of the character has been repeated by given integer times."*).

55. With regard to **claim 17**, the combination of Kanbe et al and Szeliski et al meets the limitations of claim 11 on which claim 13 depends, and teaches "the operation of using a series of triggers for controlling the character in response to game situations, wherein game situations include actions by the human operator" as Kanbe et al discloses that a user's actions contribute to the game situation (*machine translation of paragraph 70 : "That is, CPU 8 generates the command as a task for drawing or a voice output suitably based on the contents of directions (...a discarded tile, reach a tile, [other game conditions], etc.) directed from a game player through a controller 16."*), which subsequently triggers the character responses (*machine translated paragraph 64*). The combination of Kanbe et al and Szeliski et al does not include "inaction or time between moves" in the situation. Tateishi discloses "the operation of controlling the character in response to game situations including human operator inaction and the time between moves by the human operator" as shown in the rejection of claim 13.

56. With regard to **claim 91**, the combination of Kanbe et al and Szeliski et al meet the limitations of claim 89 on which claim 91 depends, and the combination meets the limitation of claim 91 excluding the time between moves, wherein Kanbe et al discloses "the operation of using a series of triggers for controlling the character in response to game situations, wherein game situations include actions by the human operator," as shown in the rejection of claim 17. Tateishi discloses "the operation of controlling the character in response to game situations including human operator inaction and the time between moves by the human operator" as shown in the rejection of claim 13.

57. Kanbe et al, Szeliski et al, and Tateishi are analogous art because they are from the same problem solving area: simulating realistic interaction with computer animated objects. At the

time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the time between the operator's moves as disclosed by Tateishi to the interaction between human and computer characters of Kanbe et al and Szeliski et al. The motivation for doing so would have been to make the computer-controlled characters seem more human to increase the realism of the interaction. Therefore, it would have been obvious to further modify Kanbe et al and Szeliski et al with Tateishi to obtain the invention as specified in **claims 13, 17 and 91**.

58. With regard to **claim 21**, the combination of Kanbe et al and Szeliski et al meets the limitations of claim 11 on which claim 21 depends, but does not teach "making a direct change to the character." Tateishi discloses "the operation of modifying the character comprises making a direct change to the character" (*S102 shown in Fig. 6; lines 1-4 of column 10: "In case of the manual designation (Yes at step S101), the player selects and sets a character and background data via a given menu image (step S102). "*).

59. At the time of the invention it would have been obvious to a person of ordinary skill in the art to add the operation of directly modifying the character as disclosed by Tateishi to game disclosed by Kanbe et al and Szeliski et al. The motivation for doing so would have been to allow the user to customize the interface, and provide variety to keep the user interested after several subsequent interactions. Therefore, it would have been obvious to further modify Kanbe et al and Szeliski et al with Tateishi obtain the invention as specified in **claim 21**.

60. With regard to **claim 81**, the combination of Kanbe et al and Szeliski et al shows the limitations of claim 80 on which claim 81 depends. Furthermore, the combination of Kanbe et al and Szeliski et al meets the limitation of claim 81 recited on lines 20 and 21 of page 23, wherein

Kanbe et al discloses "using the current state by a decision logic to determine how to control the background in the environment," as shown in the rejection of claim 66. The combination of Kanbe et al and Szeliski et al meets the limitation of claim 81 recited on lines 22 and 23 of page 23, wherein Szeliski et al discloses "interacting decision logic with a video controller" in Fig. 12 in order to schedule primitive video loops to create a new video sequences from fixed length video clips. The combination of Kanbe et al and Szeliski et al does not teach "sending a selection of control of the background to the display." Tateishi discloses "the operation of sending a selection of control of the background to the display" (*S102 shown in Fig. 6; lines 1-4 of column 10: "In case of the manual designation (Yes at step S101), the player selects and sets a character and background data via a given menu image (step S102)."*).

61. At the time of the invention it would have been obvious to a person of ordinary skill in the art to add the operation of controlling the background and a character as disclosed by Tateishi to game disclosed by Kanbe et al and Szeliski et al. The motivation for doing so would have been to allow the user to customize the interface, and provide variety to keep the user interested after several subsequent interactions. Therefore, it would have been obvious to further modify Kanbe et al and Szeliski et al with Tateishi obtain the invention as specified in **claim 81**.

62. **Claim 82** is met by the combination of Kanbe et al, Szeliski et al and Tateishi, wherein Szeliski et al discloses "presenting a continuously streaming video" (*line 66 of column 1 through line 1 of column 2: "The new medium, which is referred to as a video texture, can provide a continuous, infinitely varying stream of video images."; lines 51-52 of column 2: "Further, the frames of the video sprite could be inserted into a previously derived background image (or frames of a background video)..."*).

63. **Claims 27, 29, 35, 83, 86, and 88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanbe et al in view of Szeliski et al and in further view of U.S. Patent No. 6,676,518 to Sawa et al (herein referred to "Sawa et al.")**

64. With regard to **claim 27**, the combination of Kanbe et al and Szeliski et al meets the limitations of claim 11 on which claim 27 depends, but does not specifically show a three-dimensional representation of a playing area. Sawa et al discloses a "three-dimensional representation of a playing area" (*Figs. 5-8, and 14-15 show a three-dimensional representation 31 of a soccer playing area."*).

65. With regard to **claim 29**, the combination of Kanbe et al and Szeliski et al meets the limitations of claim 11 on which claim 29 depends, but does not specifically show simultaneously presenting a two-dimensional and three-dimensional area simultaneously. Sawa et al shows "presenting a two-dimensional and three-dimensional area simultaneously" (*Figs. 5-8, and 14-15 show a three-dimensional representation of a soccer playing area 31 and the corresponding two-dimensional view 36 simultaneously.*).

66. With regard to **claim 35**, the combination of Kanbe et al and Szeliski et al meets the limitations of claim 30 on which claim 35 depends, and meets the limitation of claim 35 recited on line 28 of page 16, wherein Kanbe discloses a "two-dimensional representation of the playing area" (*drawing 3.)* The combination of Kanbe et al and Szeliski et al does not disclose a three-dimensional representation of a playing area. Sawa et al discloses a "three-dimensional representation of a playing area" (*Figs. 5-8, and 14-15 show a three-dimensional representation 31 of a soccer playing area."*). Sawa et al discloses "simultaneously presenting a two-dimension representation of the playing area to transmit information regarding a game to an operator and to

permit the operator to simultaneously observe action in both two and three dimensions" (*Fig. 5 shows a three-dimensional view of a character 32 in the three-dimensional view 31 and the character 32 at the corresponding position in the two-dimensional view 36; lines 25-28 of column 5: "In this map 36, the positions of the player characters of the own and enemy teams and that of the player character 32 are distinguishably displayed."*).

67. With regard to **claim 86,** the combination of Kanbe et al and Szeliski et al meets the limitations of claim 85 on which claim 86 depends, but does not disclose a three-dimensional representation of a playing area. Sawa et al discloses a "three-dimensional representation of a playing area," as shown in the rejection of claim 35. Sawa et al discloses "simultaneously presenting a two-dimension representation of the playing area to transmit information regarding a game to an operator and to permit the operator to simultaneously observe action in both two and three dimensions," as shown in the rejection of claim 35, wherein Sawa et al discloses the game is a soccer game.

68. With regard to **claim 88,** the Kanbe et al and Szeliski et at combination meets the limitations of claim 87 on which claim 88 depends, and the limitation of claim 88 recited on lines 18 and 19 of page 25, wherein Kanbe et al discloses "the character's response is a response in a game, and wherein the character is a computer controlled opponent in the game" (*machine translation of paragraph 72: "Drawing 7 is a flow chart which shows change item control routines, such as face expression change according to the waging-war situation for every CPU character by the mah-jongg game equipment of this invention."*). As shown in the rejection of claim 11, Kanbe et al discloses that the computer controlled character responds in a number of ways in response to the mah-jongg game. The Kanbe et al and Szeliski et al combination does

not show a three-dimensional representation of a playing area. Sawa et al discloses "presenting a three-dimensional representation of a playing area, and simultaneously presenting a two-dimensional representation of the playing area to transmit information regarding a game to an operator and to permit the operator to simultaneously observe action in both two and three dimensions" as shown in the rejection of claim 35.

69. Kanbe et al, Szeliski et al, and Sawa et al are analogous art because they are from the same problem solving area: simulating realistic interaction with computer animated objects. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the method taught by Sawa et al to present the playing area of Kanbe et al and Szeliski et al. The motivation for doing so would have been to provide both a realistic view and a comprehensive overview of the current state of the game. Therefore, it would have been obvious to further modify Kanbe et al and Szeliski et al with Sawa et al to obtain the invention as specified in **claims 27, 29, 35, 89, and 88**.

70. With regard to **claim 83**, the combination of Kanbe et al, Szeliski et al and Tateishi meets the limitation of claim 80 on which claim 83 depends. The limitation recited on line 2 of page 24 is met by the combination Kanbe et al, Szeliski et al and Tateishi, wherein Kanbe et al discloses "presenting a two-dimensional representation of a playing area" (*Drawing 2; machine translation of paragraph 27: "In the display screen as shown in drawing 2 as which the hand and the contents of a discarded tile of the player, the contents of a discarded tile of the waging-war character, a message, and face expression..."*). The Kanbe et al, Szeliski et al and Tateishi combination does not show a three-dimensional representation. Sawa et al discloses a "three-dimensional representation of a playing area" (*Figs. 5-8, and 14-15 show a three-dimensional*

representation 31 of a soccer playing area."). Sawa et al shows "presenting a two-dimensional and three-dimensional area simultaneously" (*Figs. 5-8, and 14-15 show a three-dimensional representation of a soccer playing area 31 and the corresponding two-dimensional view 36 simultaneously.*).

71. Kanbe et al, Szeliski et al, Tateishi et al and Sawa et al are analogous art because they are from the same problem solving area: simulating realistic interaction with computer animated objects. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the method taught by Sawa et al to present the playing area of Kanbe et al, Szeliski et al and Tateishi et al. The motivation for doing so would have been to provide both a realistic view and a comprehensive overview of the current state of the game. Therefore, it would have been obvious to further modify Kanbe et al and Szeliski et al with Sawa et al to obtain the invention as specified in **claim 83**.

72. **Claims 8, 10, 36, 37, 42, 47, 51-56, 64, 65, 66, 68, 70, 73-79, 84, and 85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanbe et al in view of Sawa et al.**

73. With regard to **claims 8 and 10**, Kanbe et al does not disclose a three-dimensional playing area. Sawa et al discloses "presenting a three-dimensional representation of a playing area; and simultaneously presenting a two-dimensional playing area" (*Figs. 5-8, and 14-15 show a three-dimensional representation of a soccer playing area 31 and the corresponding two-dimensional view 36 simultaneously.*)

74. With regard to **claims 36 and 37**, Kanbe discloses a "two-dimensional representation of the playing area" (*drawing 3.)* Kanbe et al does not disclose a three-dimensional representation of a playing area. Sawa et al discloses a "three-dimensional representation of a playing area"

(*Figs. 5-8, and 14-15 show a three-dimensional representation 31 of a soccer playing area.*"). Sawa et al discloses "wherein the three-dimensional representation and the two–dimensional representation are simultaneously presented on a single video screen to allow the human operator to simultaneously observe action in both two and three dimensions," as in claim 36 and "the three-dimensional view is a side view of the playing area as would be seen in real life," and the two-dimensional view is a top-down view," as in claim 37 (*Fig. 5 shows a three-dimensional view of a character 32 in the three-dimensional side view 31 and the character 32 at the corresponding position in the two-dimensional top-down view 36, all presented on the same screen 2; lines 25-28 of column 5: "In this map 36, the positions of the player characters of the own and enemy teams and that of the player character 32 are distinguishably displayed.*").

75. With regard to **claim 42**, Kanbe et al discloses a character along with a two-dimensional representation of a playing area (*drawing 2.*) With regard to the limitations of claim 42 recited on lines 7 and 8 of page 18, Kanbe et al discloses in drawing 2 presenting a character represented by an image of a face contained in a rectangular region set against a background that serves as a representation of a playing area. Kanbe et al does not disclose the limitation of claim 42 on line 9 ("presenting a three-dimensional representation of a playing area") and the limitation of claim 42 on lines 11 and 12 ("wherein the three-dimensional representation of the playing area and the two-dimensional representation of the playing area are presented simultaneously.") Sawa et al shows "presenting a three-dimensional representation of a playing area wherein the three-dimensional representation of the playing area and the two-dimensional representation of the playing area are presented simultaneously" (*Figs. 5-8, and 14-15 show a three-dimensional*

representation of a soccer playing area 31 and the corresponding two-dimensional view 36 simultaneously.)

76. With regard to **claim 76,** Kanbe et al discloses "the two-dimensional representation of the playing area of the playing area include the positions of pieces on a playing board representing the state of the game" (*drawing 4 shows the mah-jongg playing board with the playing tiles positioned in the center and along the edge; machine translated paragraph 5: "The control section which obtains image data and/or output state according to the waging-war situation of said waging-war character."*). Kanbe et al does not disclose a three-dimensional representation of the playing area. Sawa et al discloses "and the three-dimensional representation of the playing area representing the state of the game" (*Fig. 2 shows a three-dimensional view of the characters the positions of the characters on the playing area and a two-dimensional view; lines 25-28 of column 5: "In this map 36, the positions of the player characters of the own and enemy teams and that of the player character 32 are distinguishably displayed."*).

77. Kanbe et al and Sawa et al are analogous art because they are from the same problem solving area: simulating realistic interaction with computer animated objects. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the method taught by Sawa et al to present the playing area and playing pieces of Kanbe et al. The motivation for doing so would have been to provide both a realistic view and a comprehensive overview of the current state of the game. Therefore, it would have been obvious to modify Kanbe et al with Sawa et al to obtain the invention as specified in **claims 8, 10, 36, 37, 42 and 76.**

78. **Claim 47** is met by the combination of Kanbe et al and Sawa et al, wherein Kanbe et al discloses "the operation of controlling the character in response to actions of a human operator" in machine translated paragraphs 64 and 70. Kanbe et al does not use this language explicitly; however, one of ordinary skill in the art would recognize this feature is inherent from the statements where Kanbe et al discloses that a user's actions contribute to the game situation (*machine translation of paragraph 70: "That is, CPU 8 generates the command as a task for drawing or a voice output suitably based on the contents of directions (...a discarded tile, reach a tile, [other game conditions], etc.) directed from a game player through a controller 16."*), which subsequently triggers the character responses (*machine translated paragraph 64.*)

79. **Claim 51** is met by the combination of Kanbe et al and Sawa et al, wherein Kanbe et al discloses "the operation of affecting the situation state of the environment responsive to an action or to inaction by the human operator" wherein the operator's actions, such as discarding a tile, can cause an update to the mah-jongg game state as shown in machine translated paragraphs 29 and 94.

80. **Claim 52** is met by the combination of Kanbe et al and Sawa et al, wherein Kanbe et al discloses "the operation of using a series of triggers to control the character with responses that are different depending on game situation" (*the triggers corresponding to character responses (facial expressions, voices and messages) are presented in machine translated paragraphs 63 and 64.*) For example, in items 3-7 of paragraph 63, Kanbe et al discloses a trigger ("the CPU character itself – reorganization – applying...") and varied character responses ("sadness face, "usually face", "resentment face") depending on the number of tiles.

81. **Claim 53** is met by the combination of Kanbe et al and Sawa et al, wherein Kanbe et al discloses "the operation of using a series of triggers to control the character with responses that are different depending on a game situation," as shown in the rejection of claim 15. Furthermore, Kanbe et al discloses that "the responses are continuous, wherein the responses include movement both during and between game moves of the character and the human operator" (*machine translation of paragraph 138: "...changes every moment according to this invention as mentioned above -- the expression of a face, a motion of a face, a message..."*). Furthermore, in paragraphs 62-64, Kanbe et al lists various game moves by the human player and other CPU controlled players that can occur between and during a human operator's turn, such as playing tiles (*machine translation of paragraph 62: "2. When the Last Wind Tile is Player (13-15, Resentment Face)"*), that cause a change in the character's expression.

82. **Claim 54** is met by the combination of Kanbe et al and Sawa et al, wherein Kanbe et al discloses "the operation of using triggers to control responses of the character, wherein the triggers include the human operator's sequence of moves during a game" (*machine translation of paragraph 42 gives the situations that change the feeling value, "reorganization can be applied at the time of the discarded tile of other houses (-ten points)..."*). Specifically, machine translation of paragraph 42 shows that the sequence of moves of other players (including those of the human operator) may result in a change in the feeling value of the character, which in turn triggers a response in a character as described in the rejection of claim 11.

83. **Claim 55** is met by the combination of Kanbe et al and Sawa et al, wherein Kanbe et al discloses "the operation of using triggers to control responses of the character, wherein the triggers include the human operator's strategic position in a game" (*machine translation of*

paragraph 42 as shown in the rejection of claim 18.) Kanbe et al does not explicitly use this language; however one of ordinary skill in the art would recognize that this feature is inherent because paragraph 42 shows that the feeling value of a computer opponent is decremented in response to a number of actions indicating the strategic position of the other players including the human operator, and the feeling value is used to determine a response in the character, such as a change in expression, as described in the rejection of claim 11.

84. **Claim 56** is met by the combination of Kanbe et al and Sawa et al, wherein Kanbe et al discloses "the operation of using a current situation state of the interaction to determine a response in the environment by the character." Specifically, Kanbe et al discloses that the computer-controlled players respond to the current state in a number of ways: giving messages (machine translated paragraph 15), facial expressions (machine translated paragraph 7), and game actions in general such as discarding tiles (machine translated paragraph 5). Furthermore, Kanbe et al discloses, "the character is a computer-controlled player in a game" (*machine translation of paragraph 3 gives an overview of the game, where the office interprets the machine translated English phrase "waging-war character" to be a description of an opponent character, as the invention clearly pertains to a well-known game "mah-jongg"; and the phrase "CPU players" to be computer controlled, which is commonly used in the art.*)

85. **Claim 64** is met by the combination of Kanbe et al and Sawa et al, wherein Kanbe et al discloses

i. "inputting a human operator's choice of action or the operator's inaction to a situation state module" using the controller 16 (*machine translation of paragraph 70: "That is, CPU 8 generates the command as a task for drawing or a voice output suitably*

based on the contents of directions (...a discarded tile, reach a tile...etc.) directed from a game player through a controller 16.");

j. "updating a current state based on the operator's action or inaction," wherein the operator's actions, such as discarding a tile, can cause an update to the mah-jongg game state as shown in machine translated paragraphs 29 and 94;

k. "using the current state by a decision logic to determine a response in the environment by the character, wherein the character is a computer-controlled player," (*machine translation of paragraph 17: "Furthermore, a motion of the face for every waging-war character as image data in this invention is a motion which looks at which direction at least among the direction into which the tile was thrown away, the direction of the partner who cried, and the direction of a partner which carried out win preferably."; machine translation of paragraph 75: "As shown in drawing 12 , by making the example of the CPU character into Uchida (woman), first, a control section 20 is controlled by the step ST 11 with game data, and the initial set (128 points) of the basic feeling value classified by CPU character is performed."*). As previously shown, the computer-controlled players respond to the current state in a number of ways: giving messages (*machine translated paragraph 15*), facial expressions (*machine translated paragraph 7*), and game actions in general such as discarding tiles (*machine translated paragraph 5*).

86. **Claim 65** is met by the combination of Kanbe et al and Sawa et al, wherein Kanbe et al discloses "the operation of putting the operator's course of action in place and sending it to a display." Kanbe et al discloses that the operators course of action is inputted using controller 16,

and lists of possible courses of action: "a discarded tile, reach a tile," (*machine translation of paragraph 70*); in the following paragraph, Kanbe et al discloses the course of action is displayed (*machine translation of paragraph 71: "Then, the image drawing processing processor 12 performs write-in processing of the image data which should draw on RAM 8 etc. based on the above-mentioned count result."*).

87. **Claim 66** is met by the combination of Kanbe et al and Sawa et al, wherein Kanbe et al discloses "the operation of using the current state by the decision logic to determine how to control the character" (*items 3-7 of paragraph 63 shows character responses ("sadness face, "usually face", "resentment face") controlled depending on the number of tiles*) "and the background in the environment" (*drawing 2 shows the playing area which also serves as the background which displays the current state of the game; machine translation of paragraph 5: "The control section which obtains image data and/or voice data so that it may be in the display and/or output state according to the waging-war situation of said waging-war character..."*).

88. **Claim 68** is met by the combination of Kanbe et al and Sawa et al, wherein Kanbe et al discloses "inputting a human operator's choice of action or the operator's inaction to a situation state module" (*as shown in the rejection of claim 64 with regard to the limitation on lines 2 and 3 on page 21*); "updating a current state based on the operator's action or inaction" (*as shown in the rejection of claim 64 with regard to the limitation on line 4 on page 21*); "using the current state by a decision logic to determine how to control the background in the environment" (*as shown in the rejection of claim 66*).

89. **Claim 70** is met by the combination of Kanbe et al and Sawa et al, wherein Kanbe et al discloses "the operation of presenting courses of action to the display after utilizing appropriate

decision logic, wherein the decision logic is a computer algorithm" (*machine translated paragraph 31: "Here, actuation by this invention is explained in more detail below about the control section 20 including CPU 6 controlled by the game data recorded on the record medium 5"; machine translated paragraph 39: "Next, the example is explained in detail about the concrete contents of the game data which consist of image data, voice data, program data, etc."; drawing 1*).

90. **Claim 73** is met by the combination of Kanbe et al and Sawa et al, wherein Kanbe et al discloses "the operation of providing information regarding the current situation state on a display" (*machine translation of paragraph 29: "...the mah-jongg waging-war situation for every CPU character will be displayed on a screen..."*).

91. **Claim 74** is met by the combination of Kanbe et al and Sawa et al, wherein Kanbe et al discloses "the playing area includes a playing board, and wherein the playing area further includes playing pieces" (*drawing 4 shows the mah-jongg playing board with the playing tiles positioned in the center and along the edges*).

92. **Claim 75** is met by the combination of Kanbe et al and Sawa et al, wherein Sawa et al discloses "the two-dimensional representation of the playing area and the three-dimensional representation of the playing area include the state of the interaction" (*Fig. 2 shows a three-dimensional view of the characters the positions of the characters on the playing area and a two-dimensional view; lines 25-28 of column 5: "In this map 36, the positions of the player characters of the own and enemy teams and that of the player character 32 are distinguishably displayed."*).

93. **Claim 77** is met by the combination of Kanbe et al and Sawa et al, wherein Sawa et al discloses "the three-dimensional representation of the playing area is a view as would be seen in real-life from a player's perspective." Sawa et al shows in Fig. 5 a view of the playing area from a player's perspective in real-life, as evidenced by correct depth-cues such as player 34 appearing smaller than player 32 and drawn at a higher position on the screen.

94. **Claim 78** is met by the combination of Kanbe et al and Sawa et al, wherein Sawa et al discloses "the two-dimensional representation of the playing area is a top-down view of the playing area, and is positioned in front of the background, and is transparent" (*a two-dimensional view is a top down view of the playing area 31 is shown in Figs. 2, 5-8, 14, 15*).

95. **Claim 79** is met by the combination of Kanbe et al and Sawa et al, wherein Sawa et al discloses "the two-dimensional representation of the playing area shows all corresponding movement in both time and space from a game shown in the three-dimensional representation" (*Figs. 2, 5-8, 14, 15 shows a player 32 at the same position with respect to other features in the 3-dimensional view on the playing area with in the three-dimensional view 31 and the two-dimensional view 36; lines 25-28 of column 5: "In this map 36, the positions of the player characters of the own and enemy teams and that of the player character 32 are distinguishably displayed."*).

96. With regard to **claim 84**, Kanbe et al discloses "inputting an operator's choice of action or inaction" using the controller 16 (*machine translation of paragraph 70: "That is, CPU 8 generates the command as a task for drawing or a voice output suitably based on the contents of directions (...a discarded tile, reach a tile, [other game actions], etc.) directed from a game player through a controller 16."*); "updating a current state based on the operator's action or

inaction; using the current state by a decision logic to determine a response in a setting by the character; modifying the character," (*as shown in the rejection of claim 11 of the limitation recited on lines 19-24 on page 13*). Kanbe et al does not disclose a streaming video or a series of video clips as in the limitation recited on lines 8 and 9 on page 24. Szeliski et al discloses "presenting a series of individual video clips that are joined in to the appearance of a continuous streaming image" (*lines 4-9 of column 13: "Rather, the video clip could be made up of multiple sequences of the scene captured at different times. Regardless of how many video sequences make up the inputted video clip, the trick is to produce the aforementioned new sequences such that the motion appears smooth and seamless to the viewer."*) of a real-world character (*lines 43-45 of column 2: "For example, another application of the video sprite concept involves objects that move about the scene in the input video clip such as an animal, vehicle, and person."*). Szeliski et al discloses "presenting a streaming video of a real-world background scene" (*line 66 of column 1 through line 1 of column 2: "The new medium, which is referred to as a video texture, can provide a continuous, infinitely varying stream of video images."; line 65 of column 21 through line 1 of column 22 as shown in the rejection of claim 11; lines 16-18 of column 2 as shown in the rejection of claim 71*).

97. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the character motion and the background disclosed by Kanbe et al with the method for creating a continuous character and background motion from video disclosed by Szeliski et al. The motivation for doing so would have been to achieve a greater degree of realism by giving a character and the background "dynamic qualities," as suggested by Szeliski

et al in lines 9-11 of column 2. Therefore, it would have been obvious to further modify the combination of Kanbe et al with Szeliski et al to obtain the invention as specified in **claim 84**.

98. With regard to **claim 85**, the limitations of the parent claim 84 are met by the of Kanbe et al and Szeliski et al. Furthermore, Kanbe et al discloses "using the current state by a decision logic to determine how to control the background in the environment" (as shown in the rejection of claim 66). Szeliski et al discloses "interacting decision logic with a video controller" in Fig. 12 in order to schedule primitive video loops to create a new video sequences from fixed length video clips.

99. In an embodiment, Szeliski shows "interacting decision logic with a video controller to modify the background after the decision logic uses the current state" lines 4-9 of column 26: "As the user moves a slider (e.g., a time bar like on a video player) selecting a certain temporal portion of the video, the synthesis attempts to select frames that remain within that portion of the video, while at the same time using only fairly smooth transitions to jump back in time." As previously shown in the rejection of parent claim 84, Szeliski et al discloses using video textures as background.

100. At the time of the invention it would have been obvious to a person of ordinary skill in the art to further modify the Kanbe et al and Szeliski et al combination to substitute video coupled with decision logic to change the background based on the current state as disclosed by Szeliski et al instead of traditional animation as disclosed by Kanbe et al. The motivation for doing so is stated by Szeliski et al on lines 33-35 of column 29: "The user-directed video sprites are an alternative to traditional animation where using easily and cheaply acquired video footage

makes elaborate hand modeling unnecessary." Therefore, it would have been obvious to further modify Kanbe et al with Szeliski et al to obtain the invention as specified in **claim 85**.

101. **Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanbe et al in view of Sawa et al and in further view of U.S. Patent 6,784,901 to Harvey et al (herein referred to as "Harvey et al.")**

102. With regard to **claim 38**, the combination of Kanbe et al and Sawa et al shows a two-dimensional view. Kanbe et al and Sawa et al does not specifically disclose a see-through view. Harvey et al discloses "a two-dimensional window overlaid on a three-dimensional view that is see-through" (*Fig. 11; lines 46-49 of column 9: "Items window 1116 may be translucent so as to not completely obscure the action in the 3D world."*).

103. Kanbe et al, Sawa et al and Harvey et al are analogous art because they are from the same problem solving area: simulating a realistic interaction. At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the combination of Kanbe et al and Sawa et by making the two-dimensional view see-though as taught by Harvey et al. The motivation for doing so would have been to "not completely obscure the action in the 3D world," as stated by Harvey et al in lines 46-49 of column 9. Therefore, it would have been obvious to further modify Kanbe et al and Sawa et al with Harvey et al to obtain the invention as specified in **claim 38**.

104. Claims 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanbe et al in view of Sawa et al and Harvey et al and in further view of Szeliski et al.

105. With regard to **claim 39**, the combination of Kanbe et al, Sawa et al and Harvey et al meets the limitation of claim 38 on which claim 39 depends, and meets the limitation of claim 39

recited on line 22 of page 17, wherein Kanbe et al discloses "setting a character against the background as shown in the rejection of limitations of claim 42 recited on lines 7 and 8 of page 18. The combination of Kanbe et al, Sawa et al and Harvey et al does not show video. Szeliski et al discloses "continuously streaming video of a background scene" (*line 66 of column 1 through line 1 of column 2: "The new medium, which is referred to as a video texture, can provide a continuous, infinitely varying stream of video images."; line 65 of column 21 through line 1 of column 22 as shown in the rejection of claim 11; lines 16-18 of column 2: "Video textures could also find application as dynamic backdrops for scenes composited from live and synthetic elements."*).

106. With regard to **claim 40**, the combination of Kanbe et al, Sawa et al and Harvey et al does not disclose a series of video clips. Szeliski et al discloses "presenting a series of individual video clips that are joined in to the appearance of a continuous streaming image" (*lines 4-9 of column 13: "Rather, the video clip could be made up of multiple sequences of the scene captured at different times. Regardless of how many video sequences make up the inputted video clip, the trick is to produce the aforementioned new sequences such that the motion appears smooth and seamless to the viewer."*) of a character (*lines 43-45 of column 2: "For example, another application of the video sprite concept involves objects that move about the scene in the input video clip such as an animal, vehicle, and person."*).

107. Kanbe et al, Sawa et al, Harvey et al, and Szeliski et al are analogous art because they are from the same problem solving area: simulating realistic interaction with virtual objects. At the time of the invention it would have been obvious to a person of ordinary skill in the art to substitute a continuous video background and character as disclosed by Szeliski et al for the

synthetic non-video background and character of the Kanbe et al, Sawa et al, and Harvey et al combination. The motivation for doing so would have been to give the character and the background "dynamic qualities" as stated by Szeliski et al in lines 9-11 of column 2, enhancing the realism of the interaction. Therefore, it would have been obvious to combine Kanbe et al, Sawa et al, and Harvey et al with Szeliski et al to obtain the invention as specified in **claims 39 and 40.**

108. **Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kanbe et al in view of Sawa et al, Harvey et al, Szeliski et al in further view of Linnett et al.**

109. With regard to **claim 41**, the combination of Kanbe et al, Sawa et al, Harvey et al, and Szeliski et al meets all of the limitations of claim 40 on which claim 41 depends, but does not show a time-depended motion of the character based on user interaction. Linnett et al discloses "providing a motion of the character in a time-dependent manner based on interaction with the human operator" (*lines 38-41 of column 10: "The idle animation is displayed whenever no other commands have been send to the actor services 112. It should be appreciated that the idle animation may be requested by applications 28 and by the shell 30."*).

110. Kanbe et al, Sawa et al, Harvey et al, Szeliski et al and Linnett et al are analogous art because they are from the same problem solving area: simulating realistic interaction with virtual objects. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the aspect of time with respect to character motion as disclosed by Linnett et al to the interaction between human and computer characters of the Kanbe et al, Sawa et al, Harvey et al, and Szeliski et al combination. The motivation for doing so would have been to make the computer-controlled characters seem more human to increase the realism of the

interaction. Therefore, it would have been obvious to further modify the Kanbe et al, Sawa et al, Harvey et al, and Szeliski et al combination with Linnett to obtain the invention as specified in **claim 41.**

111. **Claims 43-46, 57, 59, 69, 71, and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanbe et al in view of Sawa et al and in further view of Szeliski et al.**

112. With regard to **claim 43**, the combination of Kanbe et al and Sawa et al show the limitations of claim 42, and Kanbe et al discloses character motion (*machine translated paragraph 38: "Moreover, a motion of the face for every waging-war character carries out the motion which looks at which direction..."*), and "the character is a representation of a real-world potential player" (*machine translation of paragraph 3 gives an overview of the game, where the office interprets the machine translated English phrase "waging-war character" to be a description of an opponent character, as the invention clearly pertains to a well-known game "mah-jongg."*). The combination of Kanbe et al and Sawa et al does not show "presenting a continuously streaming video of the character." Szeliski et al discloses "presenting a continuously streaming video" (*line 66 of column 1 through line 1 of column 2: "The new medium, which is referred to as a video texture, can provide a continuous, infinitely varying stream of video images."; lines 51-52 of column 2: "Further, the frames of the video sprite could be inserted into a previously derived background image (or frames of a background video)..."*) of a character (*lines 43-45 of column 2: "For example, another application of the video sprite concept involves objects that move about the scene in the input video clip such as an animal, vehicle, and person."*).

113. With regard to **claim 45**, the combination of Kanbe et al and Sawa et al show the limitations of claim 42, and Kanbe et al discloses character motion as shown in the rejection of claim 43. The combination of Kanbe et al and Sawa et al does not specifically teach using "video clips joined into the appearance of a continuous streaming image of a character." Szeliski et al discloses "presenting a series of individual video clips that are joined in to the appearance of a continuous streaming image" (*lines 4-9 of column 13: "Rather, the video clip could be made up of multiple sequences of the scene captured at different times. Regardless of how many video sequences make up the inputted video clip, the trick is to produce the aforementioned new sequences such that the motion appears smooth and seamless to the viewer."*) of a character (*lines 43-45 of column 2: "For example, another application of the video sprite concept involves objects that move about the scene in the input video clip such as an animal, vehicle, and person."*).

114. With regard to **claim 57**, the combination of Kanbe et al and Sawa et al show modifying a character: Kanbe et al discloses modifying the characters based on triggers, such as changing the character's expression as previously shown. Kanbe et al does not specifically teach interacting decision logic with a video controller. Szeliski et al discloses "interacting decision logic with a video controller" in Fig. 12 in order to schedule primitive video loops to create a new video sequences from fixed length video clips.

115. With regard to **claim 59**, as previously shown, the combination of Kanbe et al and Sawa et al show modifying a character. The combination of Kanbe et al and Sawa et al does not specifically teach a video library. Szeliski et al discloses "the operation of modifying a character using a library of videos" (*lines 33-36 of column 20: "After finding the list of primitive loops in*

the lowest cost compound loop for a particular loop length, the primitive loops (or transitions) are scheduled in some order so that they form a valid compound loop as described above."; *lines 43-45 of column 2: "For example, another application of the video sprite concept involves objects that move about the scene in the input video clip-such as an animal, vehicle, and person"*). Szeliski et al does not use the explicit language "a library of videos"; however, one of ordinary skill in the art would recognize that the "list of primitive fixed length video sequences" of lines 33-26 of column 20 are analogous to a library of videos as broadly recited in claim 59.

116. Kanbe et al, Sawa et al, and Szeliski et al are analogous art because they are from the same problem solving area: simulating realistic interaction with computer animated objects. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the character motion disclosed by Kanbe et al with the method for creating a continuous character motion from video disclosed by Szeliski et al. The motivation for doing so would have been to achieve a greater degree of realism by giving the character "dynamic qualities" as stated by Szeliski et al in lines 9-11 of column 2. Therefore, it would have been obvious to further modify the combination of Kanbe et al and Sawa et al with Szeliski et al to obtain the invention as specified in **claims 43, 45, 57, and 59**.

117. **Claim 44** is rejected with the rationale of claim 43. Claim 44 is similar in scope to claim 43.

118. **Claim 46** is rejected with the rationale of claim 45. Claim 46 is similar in scope to claim 45.

119. With regard to **claim 71**, as shown in the rejection of claim 57 the combination of Kanbe et al, Sawa et al and Szeliski et al shows "the operation of interacting with a video controller to

modify the character after utilizing appropriate decision logic." The combination of Kanbe et al and Sawa et al as modified by Szeliski et al in the rejection above does not show doing the same for a background. Szeliski et al discloses using the video texture, which is dependent on "the operation of interacting with a video controller" (as described above), as a background (*lines 16-18 of column 2: "video textures could also find application as dynamic backdrops for scenes composite from live and synthetic elements"*).

120. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the combination of Kanbe et al and Sawa et al so that the background is controlled by a video controller and decision logic as disclosed by Szeliski et al. The motivation for doing so would have been to achieve a greater degree of realism by giving a character and the background "dynamic qualities," as suggested by Szeliski et al in lines 9-11 of column 2. Therefore, it would have been obvious to further modify the combination of Kanbe et al and Sawa et al with Szeliski et al to obtain the invention as specified in **claim 71**.

121. With regard to **claim 72**, the combination of Kanbe et al and Sawa et al does not disclose the limitation "the operation of continuously streaming video to present a background." Szeliski et al discloses "the operation of continuously streaming video to present a background" (*line 66 of column 1 through line 1 of column 2: "The new medium, which is referred to as a video texture, can provide a continuous, infinitely varying stream of video images."; line 65 of column 21 through line 1 of column 22 as shown in the rejection of claim 11; lines 16-18 of column 2 as shown in the rejection of claim 71*).

122. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the combination of Kanbe et al and Sawa et al so that the background is

continuously streaming video as disclosed by Szeliski et al. The motivation for doing so would have been to achieve a greater degree of realism by giving a character and the background "dynamic qualities," as suggested by Szeliski et al in lines 9-11 of column 2. Therefore, it would have been obvious to further modify the combination of Kanbe et al and Sawa et al with Szeliski et al to obtain the invention as specified in **claim 72.**

123. With regard to **claim 69**, the combination of Kanbe et al and Sawa meets the limitations of claim 42 on which claim 69 depends. Furthermore, Kanbe et al discloses "relating a current situation state and current triggers to a course of action to determine the most appropriate update to the environment" in machine translated paragraph 55, where the manner in which the tile is thrown is depended on the feeling value and the state of the game. Kanbe et al discloses that the feeling value is incremented and decremented based on triggers as shown in machine-translated paragraph 42. The combination of Kanbe et al and Sawa does not show relating state and triggers to videos to determine the most appropriate update to the environment. Szeliski et al discloses "relating state and triggers to videos to determine the most appropriate update to the environment" (*lines 4-9 of column 26: "As the user moves a slider (e.g., a time bar like on a video player) selecting a certain temporal portion of the video, the synthesis attempts to select frames that remain within that portion of the video, while at the same time using only fairly smooth transitions to jump back in time."*).

124. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to relate videos to the current state and triggers as disclosed by Szeliski et al in addition to relating a course of action as disclosed by the Kanbe et al and Sawa et al combination. The motivation for doing so would have been to achieve a greater degree of realism by using video

animation instead of traditional animation, which Szeliski et al suggests is cheaper and easier than the alternative in lines 33-35 of column 29. Therefore, it would have been obvious to further modify the combination of Kanbe et al and Sawa et al with Szeliski et al to obtain the invention as specified in **claim 69**.

125. **Claims 48, 49, 50, 58, and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanbe et al in view of Sawa et al and in further view of Tateishi.**

126. With regard to **claim 48**, the combination of Kanbe et al and Sawa et al meets the limitations of claim 42, but does not teach controlling the character "in response to inaction of a human operator." Tateishi discloses "the operation of controlling the character in response to inaction of a human operator" (*Fig. 12; lines 64-67 of column 12: "A display image 9B shows the state wherein the state of no command input relative to the dialogue options displayed in front of the character has been repeated by given integer times."*).

127. With regard to **claim 49**, the combination of Kanbe et al and Sawa et al meets the limitations of claim 42, but does not teach "the operation of continuously controlling the character in response to actions and inaction of a human operator." Tateishi discloses "the operation of continuously controlling the character in response to actions and inaction of a human operator" (*lines 36-39 of column 13: "With this arrangement, the player can enjoy the character images and the background images which change in real time based on command inputs from the player."; lines 10-13 of column 13: "As described above, when no command input is given within the idle time, different subsequent processes are carried out as compared with the case in which the command Input is given within the idle time."*).

128. With regard to **claim 50**, the combination of Kanbe et al and Sawa et al meets the limitations of claim 42, but does not teach controlling the character "in response to time between moves by the human operator." Tateishi discloses "the operation of controlling the character in response to the time between moves by the human operator" (*Fig. 12; lines 64-67 of column 12: "A display image 9B shows the state wherein the state of no command input relative to the dialogue options displayed in front of the character has been repeated by given integer times."*).

129. Kanbe et al, Sawa et al and Tateishi are analogous art because they are from the same problem solving area: simulating realistic interaction with computer animated objects. At the time of the invention it would have been obvious to a person of ordinary skill in the art to incorporate the aspect of time and user inaction, as disclosed by Tateishi, to the interaction between human and computer characters of the Kanbe et al and Sawa et al combination. The motivation for doing so would have been to make the computer-controlled characters seem more human to increase the realism of the interaction. Therefore, it would have been obvious to further modify the Kanbe et al and Sawa et al combination with Tateishi to obtain the invention as specified in **claims 48, 49 and 50.**

130. With regard to **claims 67 and 58**, combination of Kanbe et al and Sawa et al meets the limitations of claim 66 on which claim 67 depends, and the limitations of claim 42 on which claim 58 depends. The combination of Kanbe et al and Sawa et al does not teach "the operation of putting a selection of the control of the character and a control of the background in place, and sending them to a display," as recited in claim 67, or making a "direct change to a character," as recited in claim 58. Tateishi discloses "the operation of putting a selection of the control of the character and a control of the background in place, and sending them to a display," as recited in

claim 67, which makes a "direct change to a character," as recited in claim 58 (as in c (*S102 shown in Fig. 6; lines 1-4 of column 10: "In case of the manual designation (Yes at step S101), the player selects and sets a character and background data via a given menu image (step S102).*").

131. Kanbe et al, Sawa et al, and Tateishi are analogous art because they are from the same problem solving area: simulating realistic interaction with computer animated objects. At the time of the invention it would have been obvious to a person of ordinary skill in the art to add the operation of controlling the background and a character as disclosed by Tateishi to game disclosed by Kanbe et al and Sawa et al. The motivation for doing so would have been to allow the user to customize the interface, and provide variety to keep the user interested after several subsequent interactions. Therefore, it would have been obvious to further modify Kanbe et al and Sawa et al with Tateishi obtain the invention as specified in **claims 67 and 58**.

132. **Claim 60-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanbe et al in view of Sawa et al and in further view of Linnett et al.**

133. With regard to **claim 60,** as previously shown, the combination of Kanbe et al and Sawa et al show modifying a character based on triggers. The combination of Kanbe et al and Sawa et al does not specifically teach using a library of animations. Linnett et al discloses "the operation of modifying the character using a library of animations" (*Fig. 11*). Linnett et al discloses the operation of retrieving an animation 115 from a library 29. Linnett et al does not use the explicit language: modify a character; however, one of ordinary skill in the art would recognize that this feature is inherent from the statement on lines 52 –55 of column 7: "For personal character, a

separate animation is provided for each designated action that the character may perform or for each command to which the character is responsive."

134. Kanbe et al, Sawa et al, and Linnett et al are analogous art because they are from the same problem solving area: simulating realistic interaction with computer animated objects. At the time of the invention it would have been obvious to a person of ordinary skill in the art to use the library of animations disclosed by Linnett et al to modify the characters in response to the actions of the player and other triggers disclosed by the Kanbe et al and Sawa et al combination. The motivation for doing so would have been to give the character a more personal feel thereby increasing the realism of the interaction; for instance, Linnett et al suggests that a character's animations can be can be used to create a personality for the character in lines 39-40 of column 5. Therefore, it would have been obvious to further modify Kanbe et al and Sawa et al with Linnett et al obtain the invention as specified in **claim 60.**

135. **Claim 61** is met by the combination of Kanbe et al, Sawa et al and Linnett et al, wherein Linnett et al discloses "the character is an animated character, and wherein the animation is a cartoon" (*Fig. 8 shows a cartoon dog; lines 41-43 of column 7: "FIG. 8 shows a sequence of video frames 78, 80, 82 and 84 that are part of an animation for the dog personal character."*).

136. With regard to **claims 62 and 63**, the Kanbe et al, Sawa et al and Linnett et al combination does not show that the animation is cell or clay animation; instead, the Kanbe et al, Sawa et al and Linnet et al combination shows the animation is cartoon.

137. At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to use clay animation or cell animation because the applicant has not disclosed that using clay animation or cell animation provides an advantage, is

used for a particular purpose, or solves a stated problem. Furthermore, one of ordinary skill in the art would have expected the Kanbe et al, Sawa et al and Linnett et al combination to perform equally well with either cartoon animation as taught by Linnett et al or the claimed clay (claim 63) or cell (claim 62) animation because all three types of animations would perform the same function of representing a character in an interaction equally well considering that they are all synthetic.

138. Therefore, it would have been prima facie obvious to modify the Kanbe et al, Sawa et al and Linnett et al combination to obtain the invention as specified in **claims 62 and 63** because such a modification would have been considered a mere design consideration which fails to patentably distinguish over the prior art of Kanbe et al, Sawa et al and Linnett et al.

Conclusion

139. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent Application Publication 2002/0118194 to Lanciault et al shows triggered non-linear animation. Arno Schödl, Richard Szeliski, David H. Salesin, Irfan Essa, "Video textures," July 2000, Proceedings of the 27th Annual Conference on Computer Graphics and Interactive Techniques, p.489-498 shows a "continuous infinitely varying stream of images" used for representing people, animals and other objects. Stephen Pollard, Sean Hayes, "3D Video Sprites," Feb. 1998, HPL-98-25, HP Labs Technical Report discloses streaming video with computer generative virtual environments. U.S. Patent No. 6,168,519 to Nakagawa et al shows a two-dimensional representation of a playing area and a three-dimensional representation of a playing area displayed simultaneously.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Repko whose telephone number is 571-272-8624. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on 571-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMR

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